

What IS claimed IS.

What is claimed is:

1. A protective layer which is relatively permeable for CO_2 and is relatively impermeable for SO_2 and has a gas-permeable carrier (10) made of a material which is resistant to sulfuric acid media such as SO_2 and SO_3 , and it has a surface (8) which can be exposed to a gas and is provided with an oxidizing agent whose oxidation potential is sufficient to oxidize SO_2 .
2. The protective layer according to Claim 1, wherein a nonvolatile oxidizing agent is used.
3. The protective layer according to Claim 1 or 2, wherein potassium permanganate is used as the oxidizing agent.
4. The protective layer according to one of Claims 1 through 3, wherein the carrier (10) is made of aluminum oxide.
5. The protective layer according to one of Claims 1 through 4, wherein the carrier (10) has at least one tube (6) whose inside wall (8) is provided with the oxidizing agent.
6. The protective layer according to Claim 5, wherein the carrier (10) is designed as a block composed of a plurality of axially parallel cylindrical tubes (6) aligned side by side.
7. The protective layer according to Claim 5 or 6, wherein the tubes (6) are designed as round cylinders.
8. The protective layer according to Claim 5, wherein the carrier (10) is designed as a block composed of several tubes (6) arranged side by side in radial alignment relative to a straight line or a point (11).
9. The protective layer according to Claim 8, wherein the tubes (6) have a cross section which tapers toward the straight line or the point

(11).

10. The protective layer according to 1 of Claims 1 through 4,
wherein the carrier (10) has at least one grid (12) composed of intersecting grid rods (13), the
grid rods (13) being provided with oxidizing agent.

11. The protective layer according to Claim 10,
wherein the carrier (10) is designed as a block composed of several grids (12) stacked one
above the other.

12. A CO₂ sensor, in particular for a smoke detector,
wherein the CO₂ sensor (4) is provided with a protective layer (7) according to one of the
preceding claims, thus separating the CO₂ sensor (4) from a room (1) to be monitored for CO₂
content.